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ABSTRACT

The effect of various socioeconomic factors on students' choice of and success in different types of postsecondary education programs in Sweden is discussed in an effort to determine if discrepancies exist regarding participation in university studies. Data were collected from school records, personal background surveys, intelligence tests, standard achievement tests, and student questionnaires. The survey population included a ten percent sample of all Swedes born in 1948. By 1976 approximately one-fifth of these individuals had entered some form of postsecondary education. About 40 percent of those who had enrolled in such programs had also completed an academic degree from a university or other institution of higher education. A total of 34 percent of the children from academic homes had completed postsecondary degrees. The corresponding percentage from working class homes was four percent, indicating that one is more likely to achieve an academic degree if one comes from a similarly educated background. An examination of the professional degree programs such as medicine and dentistry indicates that about eight percent of the children from academic homes had completed one of these programs compared with less than 0.2 percent of the children from working class homes. It is concluded that socially-conditioned educational gaps still exist in Sweden. (Author/SF)

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ON EQUALITY AND UNIVERSITY EDUCATION IN SWEDEN

Allan Svensson

Institute of Education
University of Göteborg

The study has been supported by the National Swedish Board of Universities and Colleges.

ON EQUALITY AND UNIVERSITY EDUCATION IN SWEDEN

Abstract

The aim of this investigation is to study the significance which different factors in childhood - family and school environment, intelligence, interest in studies, etc. - have on the choice of and success in different types of post-secondary education.

The investigation includes a ten per cent sample of all Swedes born in 1948, anybody born on the 5th, 15th, and 25th of every month in that year, about 12,000 individuals. By January 1, 1976, approximately one-fifth of these individuals had entered some form of post-secondary studies. About 40 per cent of those who had enrolled i such studies had also completed an academic degree from a university or other institution of higher education.

One of the facts established by the analyses made in the investigation is that 34 per cent of the children from academic homes had completed a post - secondary degree. The corresponding percentage from working-class homes is 4 per cent, which means that the probability is eight times greater of achieving an academic degree if one belongs to the former category.If, however, we only examine the "prestigious" degree programs - physician, dentist, etc., - about 8 per cent of the children from academic homes had completed one of these programs as compared with less than 0.2 per cent of the children from working-class homes. The chance, then, of completing a high-status education is forty times greater if one comes from a priviledged social class. It is, then, still justified to speak of socially-conditioned educational gaps in Sweden, for it is important to notice that the material examined here is not of a historical nature, but applies rather to individuals who, at the time of writing, have just turned thirty years of age.

ON EQUALITY AND UNIVERSITY EDUCATION IN SWEDEN

A number of Swedish studies have established the fact that there are still great discrepancies among different socio-economic groups with regard to representation in college, university and other post-secondary education (National Central Bureau of Statistics, 1976). The lower social classes are particularly poorly represented in the most attractive educational programs wich lead to such skilled professions as physician, dentist, veterinarian and certified agriculturalist. Large regional variations also exist, in so far that men and women from rural areas are clearly underrepresented in post-secondary education. Significant differences also remain between the sexes, particularly in the schools of technology and law, where women are very sparsely represented.

There is, then, a solid basis of knowledge about the existing situation, and it is well-known that equality among different groups is far from being a reality as regards participation in university studies - great discrepancies remain among different socio-economic strata, among regions and between men and women. There is, however, far less knowledge available when it comes to establishing which factors behind the existing situation are the real cause of the present inequalities.

One reason that relatively little is known about the facts behind the reality is that there has been minimal access to large representative groups which have been followed through the entire educational system. The Malmö Study is the only one carried out in Sweden thus far which has made continual information available over a long period of time.
In this study it was possible to identify a number of factors in the environment which proved significant in peoples decision to go on to post-secondary studies (Husén, 1969; Fägerlind, 1975). The small material - a total of 54 individuals who entered institutions of higher education - has, however, created limitations to the information which could be retrieved.

Another longitudinal study - the Individual Statistics Project - has now improved the possibility of establishing the decisive factors in selecting and succeeding with university-level studies. The project started in 1961 with the collection of information on all Swedes born on the 5th, 15th, and 25th of any month in 1948. This information, for about one-tenth of the age cohort, was then supplemented annually until 1969. In 1966, a new collection of data started for pupils born on the 5th, 15th, and 25th of any month in 1953. These data were supplemented until 1974. At the first collection about 90 per cent of the pupils in both samples were in the sixth grade of the compulsory school which, in 1961, was divided into two types of school: a seven- or eight-year elementary-type school, and a nine-year comprehensive school. In 1966 the elementary-type school still existed but was being gradually replaced by the present comprehensive school with a nine-year compulsory education. During this five-year interval, as a result of the successive introduction of mandatory nine-year comprehensive education, the proportion of pupils enrolled in elementary school, dropped from over 65 per cent to under 20 per cent.

The basic data collected on the first occasion consist of:

I. Information from the school records, e.g. class, type of class and school marks.

II. Information on personal background, such as parents' occupations and education.

III. Scores on three intelligence tests: verbal, spatial and reasoning.

IV. Scores on standardized achievement tests in Swedish, Mathematics and English from class six.

V. Replies to questionnaires on the pupils' attitudes to school, their spare time interests, and plans for study and work.

The annual supplementation of data consisted of information as to the subject's current educational status. After the conclusion of this regular procedure of information collection a certain amount of data was collected. The latest information from the first sample is from 1976 and applies to the approximately 2,500 individuals who had then enrolled in some form of post-secondary education. These data were made available by the Swedish Central Bureau of Statistics and include, among other things, data as to year of registration, institution, and degree completed.

Thanks to the information collected in the Individual Statistics Project, it has been possible to carry out a large number of studies regarding choice of education and occupation (Härnqvist, 1966; Härnqvist & Svensson, 1967; 1973; Reuterberg, 1968; Svensson, 1971; 1977). One of these establishes the significance of certain factors in the childhood environment for the choice of and success in post-secondary studies. A detailed report of this study has been published in Swedish (Svensson, 1977). The present article provides a brief summary of the results of the study.

How important is family background?

The study is based on the sample from 1948, i.e. individuals born on the 5th, 15th, and 25th of every month in 1948. It consists of 11,348 persons. By January 1, 1975, 2,356 of them, approximately one-fifth, had entered some sort of post-secondary education. About 40 per cent of those who had begun post-secondary studies had also completed some sort of degree program.

The social backgrounds of the individuals were classified with the aid of information about the education and occupation of the father. Five groups were distinguished:

A) Academic professions, Persons with management positions in civil service and industry.

B) Civil servants and white-collar workers in lower positions with a theoretical education beyond compulsory schooling.

C) Civil servants and white-collar workers in lower positions <u>without</u> a theoretical education beyond their obligatory schooling.

D) Farmers.

E) Laborers.

As can be seen from Table 1, column 1, group A constitutes approximately 5 per cent of the total sample, group B 10 per cent, group C 20 per cent, group D 15 per cent, and group E 50 per cent. This means that only one individual in twenty comes from an academic home while one in two comes from a working-class home.

Table 1: Distribution of different categories according to socio-economic background

Socio-economic group	*Total*		*Enrolled at univ. or other inst. of post-sec. education*		*Degree from univ. or other post-sec. school*	
	Number	*%*	*Number*	*%*	*Number*	*%*
A	625	5	407	17	213	21
B	1,111	10	531	23	223	22
C	2,343	21	572	24	239	24
D	1,557	14	222	9	90	9
E	5,712	50	624	26	228	23
Total	11,348	100	2,356	99	993	99

The proportions are entirely different for those who enrolled in a university or other institution of higher education. Among them there are more than three times as many children from academic homes while there are only half as many working-class children as their proportions in the whole group. The significance of social background stands out even more clearly if we only consider those who have completed some academic degree. In this category there are as many children from academic as from working-class homes, slightly more than 20 per cent. The same number come from each of the categories of white-collar workers, and ten per cent come from agricultural homes. In other words, one out of three children from academic homes have completed an academic degree. Among the children of white-collar workers whose father has completed some sort of secondary education, every fifth one has reached this goal. Among the children of other white-collar workers the figure sinks to every tenth, while no more than every twentieth child of a farmer or a laborer has completed an academic degree. These figures are very clear proof of the significance of social background for the individual's chances of entering and completing a long theoretical education.

There are, however, clear differences even among individuals who have completed an academic degree as regards the different groups. Those who come from lower social classes have generally chosen to study at the faculties of arts and sciences. Individuals from higher social classes, on the other hand, often choose programs with very selective enrollment, programs which take longer to complete and are more expensive, but which lead to professions with higher status and incomes, such as those of physician, dentist and veterinarian.

The table below provides information as to the difficulty involved for someone from the working classes to attain a place in more attractive programs.

Social origin	*Number of individuals in the sample*		
	Total	*With academic degree*	*With prestige program*
Intellectual home (A)	625	213 (34,1%)	54 (8,7%)
Working-class home (E)	5,712	228 (4,0%)	9 (0,2%)

In group A 34 per cent have completed a degree as opposed to 4 per cent in group E, which means that the chances are eight times greater of obtaining an academic degree if one belongs to the former category. However, if we consider only the prestigious programs - physician, dentist, etc. - slightly more than 8 per cent of the children from intellectual homes have gone through these programs as opposed to less than 0,2 per cent of the children from working-class homes. The chance of obtaining a high-status education, then, is forty times greater if one comes from a priviledged social class. It is, thus, still justified to speak of socially-dependent educational gaps in Sweden, and it is important to note that the material examined here is not of a historical nature, but applies rather to individuals who, at the time of writing, have just turned thirty years of age.

It is also important to note that the educational possibilities of children from working-class homes are not homogeneous. Certain categories within this group have an undoubtedly easier - or rather less difficult - time procuring post-secondary education. At the faculties of arts and sciences of Lund University,

for example, it was discovered that the children of skilled workers were much more likely to go on to higher education than the children of unskilled workers (Gesser & Fasth, 1973, p 77). It was not possible in the Individual Statistics Project to divide the working class group any further by their level of competence, and therefore we have not been able to throw any light on the significance of this factor. We have, on the other hand, been able to point out other important factors, one of these is the sex of the individual.

Within all the social groups more men than women go on to higher education, but in no other group is the female quota so low as in the working-class group. Here nearly twice as many men as women have completed an academic degree (table 2).
In contrast to women in higher social groups, the daughters of working-class parents have been almost totally unable to achieve a place in the male-dominated high-prestige programs.

Table 2: Sex and socio-economic group of the students who completed degree

Socio-economic group	Number		Per cent	
	Men	Women	Men	Women
A	118	95	55	45
B	127	96	57	43
C	144	95	60	40
D	53	37	59	41
E	142	86	62	38
Total	584	409	59	41

To be a woman and to come from a working-class background is, then, a double handicap when it comes to getting a qualified education and the related professional status in society. Of course this is no new or sensational fact; exactly the same situation exists among the women, twenty years older, in the Malmö Study. All one can do is to emphasize the fact that we have still not been able to eliminate nor even alleviate this double handicap.

Two other factors which are significant in this context are the number of brothers and sisters in the family and the location of the home. About 15 per cent of the working-class children have no brothers and sisters. About the same percentage come from large families with five or more children. In the former group, five per cent have completed degrees, while only one per cent of the latter group has done so. As regards place of home, less than half grew up in large communities where there was a secondary school, but 60 per cent of the working-class children who later completed academic degrees came from this group. The fact that young people from large rural working-class families have had such poor possibilities of obtaining a qualified education must be attributed to economic factors. It must have been very difficult for a working-class family with many children to bear up under the extra strain involved in letting the children complete secondary school and then go on to higher education - particularly if they lived far from the nearest secondary school.

Other factors which have proved to be significant are the type of school attended and the level of schooling of the mother. Individuals who attended the nine-year comprehensive school have begun post-secondary studies to a somewhat greater extent than those whose compulsory studies took place in other type of school, and this applies whether they were domiciled in a densly-populated or a rural area. The mother's schooling is of even greater significance. Few individuals from the working-classes had mothers who completed secondary school. These few individuals have, on the other hand, to a surprisingly great extent completed academic degrees themselves - nearly 15 per cent as compared to only two per cent of the other working-class children.

The fact that both these factors affect the choice of higher education appears to bear very slim relation to economic causes. The explanation seems to lie, instead, in differing attitudes to theoretical education. Children who have had the support and encouragement of a well-educated mother probably grew up in an environment where the attitude toward school and education was considerably more positive than in other families and this, in different ways, facilitated the children's chances of obtaining a qualified education. To a certain extent this may also apply to the students who have had the opportunity of going through the nine-year comprehensive school as opposed to those who had to leave elementary school after only seven or eight years.

The discussion above makes clear the fact that some working-class individuals have had greater possibilities than others to go on to higher education. To be a male with few brothers and sisters, to live in a district with its own secondary school, to have gone through comprehensive school, to have a well-educated mother - these are factors which facilitate this choice.
<u>These factors must not, however, hide the fact that the working class as a whole is greatly disadvantaged as regards post-secondary education</u>. Why? Why are working-class children so grossly underrepresented in higher education?

We have explained that there are fairly great differences in educational choices <u>within</u> the working class. Those who go on to post-secondary education appear to come from families with a higher economic standard and with a more positive educational atmosphere. These factors should be even more prominent when it comes to explaining the great differences among different social classes, particularly between children from academic and working-class homes. The upper social strata have an entirely different income situation and probably very few children from academic homes have had to refrain from higher education for lack of economic resources. In addition, all the fathers and most of the mothers from this class are well-acquainted with university-level studies. They know what these studies require and what doors they open - knowledge which is extremely valuable to possess when their children begin to make decisions about occupation and education.

The general applicability of this last statement is supported by the following quotation.

"*A study of survey investigations in different social systems shows a pervasive tendency toward the fact that those who manage to obtain positions which are advanced in comparison with their points of departure (through advanced education, particularly) tend to transfer their status advantages to the next generations, particularly in countries which do not deprecate material wealth. The best thing that parents can do in economic systems such as these is to take advantage of their favoured position (better education, more influence and good contacts) in order to support their children's efforts to obtain the best possible education.*" (Husén, 1977, p. 61)

How important are intelligence and ambition?

Up to this point, we have basically discussed different types of environmental factors, but what other factors can lie behind the large social educational gaps? What significance do such personal traits as capacity and ambition (willingness to work) have?
Let us first look at capacity in the terms of intelligence level. This is, of course, not independent of influence from the environment, but it may still be justified to have a separate look at this factor.

This study shows very clear connections between the results of intelligence tests administered at the age of thirteen and later choice of higher education. If we divide the individuals into ten groups of equal size according to intelligence, we find that nearly 40 per cent of the top group and nearly 20 per cent of the next-highest group have completed degree programs, while in the five lowest groups not more than one per cent have done so.
These figures apply to the entire material, but very clear connections also appear within each group, as can be seen in table 3.

Table 3: Percentage of individuals who entered post-secondary education. Material divided according to level of intelligence and socio-economic group. For each socio-economic group, the first column presents the percentage who completed an academic degree and the second column the percentage who began higher education but who did not complete an academic degree.

Intelligence level	A		B		C		D		E		Total	
	deg.	oth.	deg.	oth.	deg.	oth.	deg.	oth.	deg.	oth.	deg.	oth.
10	62	24	38	42	37	24	27	19	25	20	36	26
9	32	37	28	37	21	25	12	17	10	17	18	24
8	26	38	26	31	14	19	9	13	8	10	13	17
7	23	40	16	24	9	17	5	11	4	10	8	15
6	18	34	15	31	6	12	4	9	2	8	5	12
5	13	37	8	24	4	10	2	7	2	6	3	9
4	15	31	13	13	2	10	3	6	1	3	3	7
3	8	21	5	15	2	8	-	2	0	5	1	6
2	-	25	2	14	1	5	2	1	1	3	1	4
1	-	-	3	6	-	3	-	1	0	2	0	2
Total	34	31	20	28	10	14	6	8	4	7	9	12

The existence of such a clear relationship between intelligence and successful studies appears quite reasonable and requires no further comment. We also know that there are large differences in the results of intelligence tests administered to different socio-economic groups. Children from academic homes have a much higher average than children from working-class homes. This is another statement which will be given no further comment here. We simply establish the fact that a clear relationship between intelligence and a decision to go on to higher education as well as success in these studies does exist.

We also establish the fact that there is a considerable relationship between socio-economic group and intelligence. Can these differences in intelligence explain the differences in the choice of education among different socio-economic groups? Do the differences in intelligence explain the fact that there are so many children from academic families and so few children from working-class families enrolled in the institutions of higher education?

These questions may be answered as follows: The educational gaps decrease when consideration is taken to intelligence, but at all intelligence levels significant differences remain among the socio-economic groups. At the highest level, for example, nearly all children from academic homes go on to post-secondary studies and two-thirds of them complete an academic degree. At this same intelligence level less than half of the working-class children begin post-secondary studies and one-fourth complete a degree (see table 3). The pattern holds true at all levels, which is why we maintain that even when a variable so socio-economically influenced as intelligence is kept constant, a large part of the great educational gap among the socio-economic groups still remains. These remaining differences among the socio-economic groups can be seen very clearly in figure 1 where the numerical material from table 3 is represented graphically. The tops of the filled columns in the figure mark the percentage with an academic degree while the tops of the unfilled columns provide information as to the total number which entered post-secondary studies.

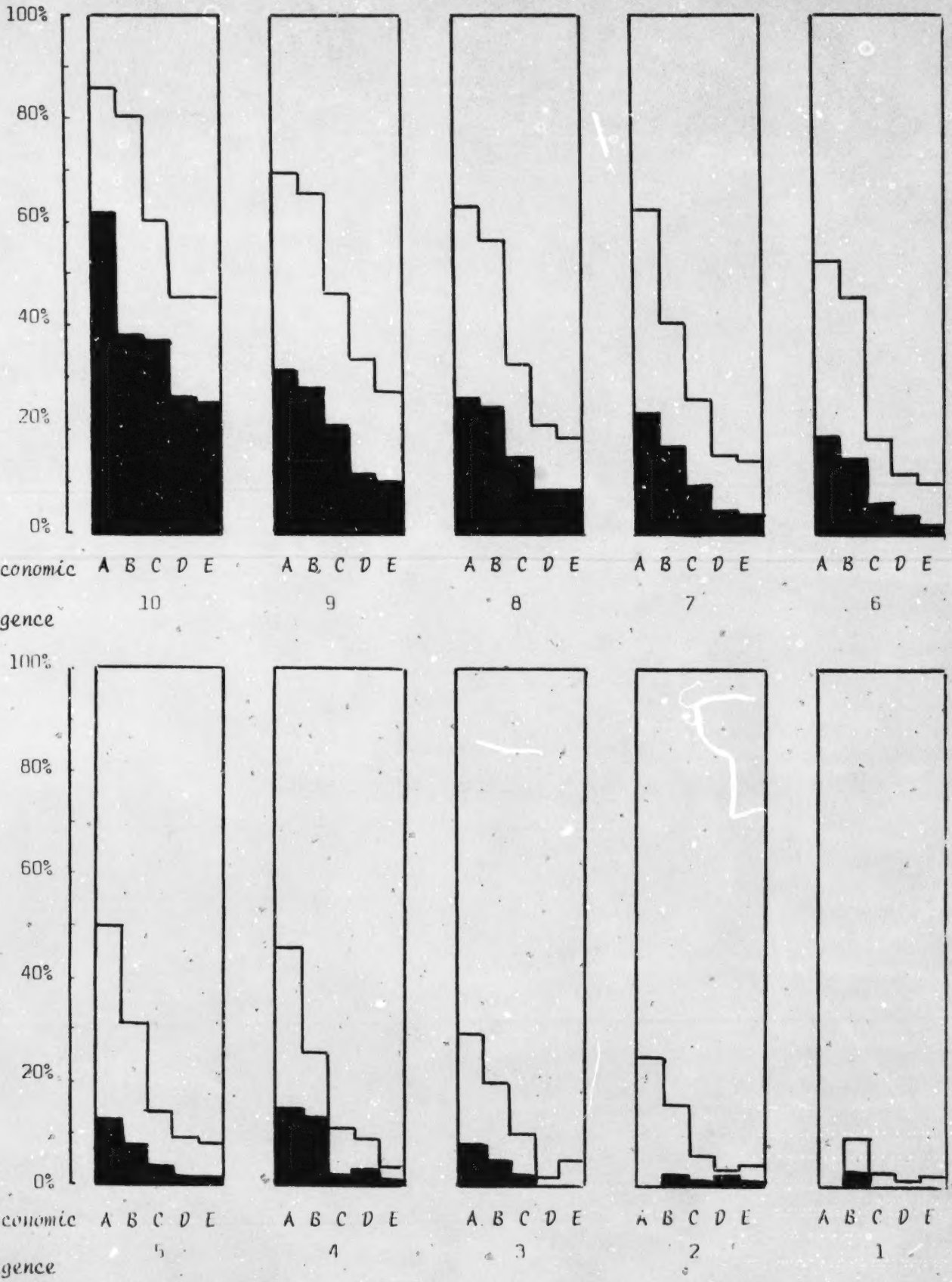

Figure 1: Relationship between intelligence, socio-economic group and post-secondary education (started and finished)

What, then, is the significance of the ambition of the student? We have estimated this by studying performance in relation to level of intelligence and have been able to establish that this type of ambition known as relative achievement (over and under-achievement), is a decisive factor. Those students who later went on to post-secondary studies and particularly those who completed an academic degree received, in class six, significantly higher marks than what might have been expected with regard to their results on intelligence tests.

Thus the ambition of the student is significant for success in higher education, and this variable is also important when we attempt to explain the educational differences which exist among different socio-economic groups. Those students who later complete an academic degree have, in addition to high potential intelligence, also shown proof, by the age of thirteen, of a pronounced motivation to study. This is true for all socio-economic groups. As regards both intelligence and ambition, however, children from academic homes are, as a group, clearly superior to children from lower socio-economic strata. Because of this, the current educational gap may be partially or even wholly attributable to a combination of these two variables. One indication of this fact is that the few working-class children who completed degrees at universities or other institutions of higher education show, in class six, intelligence test results which are just as high as the average for children from academic homes. They are, however, distinguished from the other highly intelligent working-class children in that they have succeeded in transforming their intelligence into excellent marks at school, which means that their ambition is just as pronounced as that of the children from academic homes.

If we maintain, then, that the great educational gaps among socio-economic groups can be attributed to differences in intelligence and ambition, new questions automatically appear. Why do children from academic homes have an easier time handling the verbal, spatial and reasoning problems which are included in the tests we use to define the abstract, difficult concept of "intelligence", and why do they get better marks in Swedish and mathematics than

they "should" according to their intelligence-test results? To provide an exhaustive and entirely satisfactory answer to these questions is a difficult, perhaps impossible, task which definitely lies beyond the realm of this article. It is, however, indisputable that the factors in the home and school environment which are dealt with in this study and which show a strong relationship to the choice of higher education are also of decisive significance to the individual's capacity to succeed both in intelligence tests and in his daily school work. The economic and cultural standard of the home naturally influences the individual's entire behaviour and, in doing so, also influences those variables known as intelligence and ambition. This means that when we keep these variables "constant", we are not being entirely fair to students from lower socio-economic groups who, during their first thirteen years, have not had the same support or stimulation as the students from the upper socio-economic groups. They are at a disadvantage already in class six.

Is it possible to reduce the differences in intelligence and ambition and thus bring about a fairer distribution of higher education? Can society take measures to achieve changes in such stable personality traits? As regards ambition, this does not appear to be entirely impossible, but is it possible to make general societal efforts which will have any noteworthy effect on intelligence? We consider this, too, to be possible. The fact that the thirteen-year-olds in the Individual Statistics Project from 1966 show a higher average on the intelligence tests than the sample tested in 1961 speaks in favour or this possibility. The greatest increase in test results is for girls from the lower socio-economic groups, which indicates a reduction in both differences between the sexes and socio-economic differences. In a very thorough analysis, Härnqvist and Stahle (1977) show that an increase in all intelligence factors is intimately related to the introduction of the nine-year comprehensive school and that the increase in verbal ability also shows a relationship with the expansion of the television network. In the long run, then, it appears possible to take a series of measures related to educational and social policy which would reduce the socio-economic

differences both in intelligence and other important properties which guide the individual's choice of education.

A number of measures have already been taken in order to create, more quickly and directly, social and regional equality in higher education. Some examples of this are: "open" admission to post-secondary studies, a reform in the area of Students Grants, the extramural university courses and university correspondence courses which are now offered and, most important, the all-pervasive university reform which came into force on July 1, 1977.
The data which have been presented in this investigation should be useful when the above-mentioned reform is followed up and evaluated, especially in establishing the extent to which different background factors have increased or decreased with regard to the choice of and success in different types of post-secondary education.

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